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Title: Analytics Supporting Stockpile and Enterprise Planning

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Analytics Supporting Stockpile and Enterprise Planning

DPIMA Modeling and Analysis Summit: Site Brief

Lawrence Livermore National Laboratory

May 9-11, 2023

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Deputy Directorate for Weapons (DDW)



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Analytic Capability for Strategic Planning

- A robust and growing modeling effort supports Los Alamos weapons leadership as well as NNSA (NA18, NA12, NA19) and DoD (DASD-NM, USSTRATCOM)
- Current work are valuable to several key NNSA working groups supporting strategic planning
 - Stockpile Stewardship Management Plan (SSMP)
 - Requirements & Planning Document (RPD) analysis
 - Requirements and Capacity Working Group (RCWG)
 - Production Integration Collaboration Working Group (PICWG)
 - Enterprise Modeling and Analysis Consortium (EMAC)
 - Cost Estimating Analysis Group (CEAG)

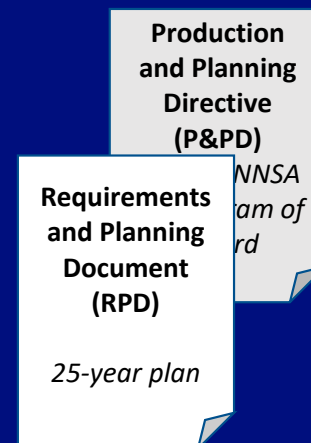


Current Modeling Activities Advancing DPIMA Goals

- Pertinent modeling efforts supporting weapons stockpile programs and external stakeholders:
 - Program of Record Explorers
 - Stockpile Commodity Tools
 - Laboratory business systems and operation modeling (unclassified)
 - Process modeling/EMAC
- Expertise, capabilities, and priorities are shared across multiple organizations
 - Weapons Directorate, Stockpile and Enterprise Analytics Office (DDW-SEA)
 - Global Security, Stockpile Modeling and Analysis Team (NEN-5)
 - Weapons Production, Strategy and Planning Office, (ALDWP-STPO)
- Expanding enterprise-level tools to better inform trade space studies (workforce, cost, infrastructure, ...)

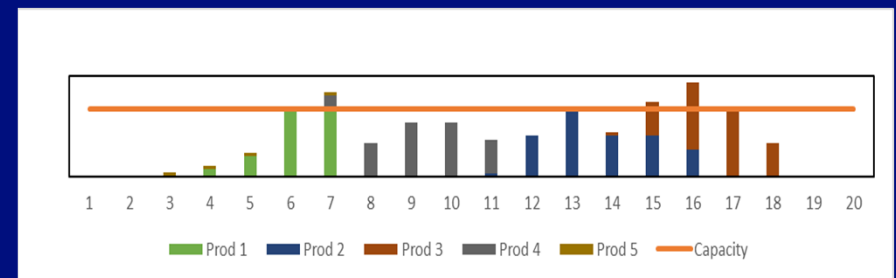
Program of Record Explorers

- This class of tools are designed to help weapons executives communicate with stakeholders.
- RPD Explorer and P&PD Explorer – Visual interactive exploration of planning documents
 - Excel-based tools that allow the user to visually explore data from the RPD and P&PD
 - Directly incorporates RPD and P&PD Spreadsheets
 - Integrates additional information on
 - Weapons system characteristics
 - DoD platform modernization
 - Output is graphical and tabular stockpile data



Weapons Component Production Scenario Tools

- Commodity Planning Tools – Executive-level decision support
 - Excel-based tools for real-time, interactive investigation of strategic planning scenarios. Allows modifying demand, inventory, and anticipated production capacity.
 - Comprehensive demand and supply signal based on
 - P&PD demand data where available
 - Incorporates additional demand for development, qual, etc.
 - Infrastructure investment plans
 - Working closely with NNSA, DAs, and PAs to capture investment options
 - Includes technology insertion opportunities
- Modeling efforts focused on supporting and analyzing current NNSA strategies (pit, tritium, radiation case, detonator, CSA, and HE models)



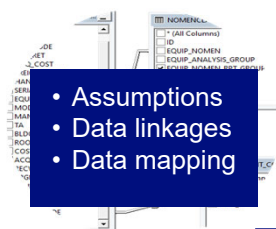
An unclassified example of similar graphical output is shown for illustrative purposes.

LANL business and operations modeling supports laboratory capabilities and equities for stockpile work

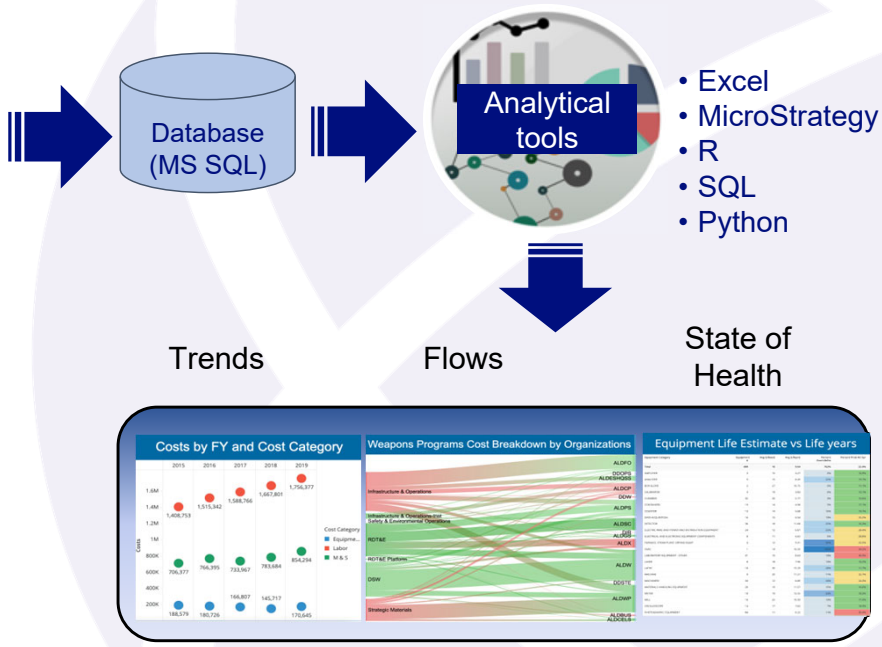
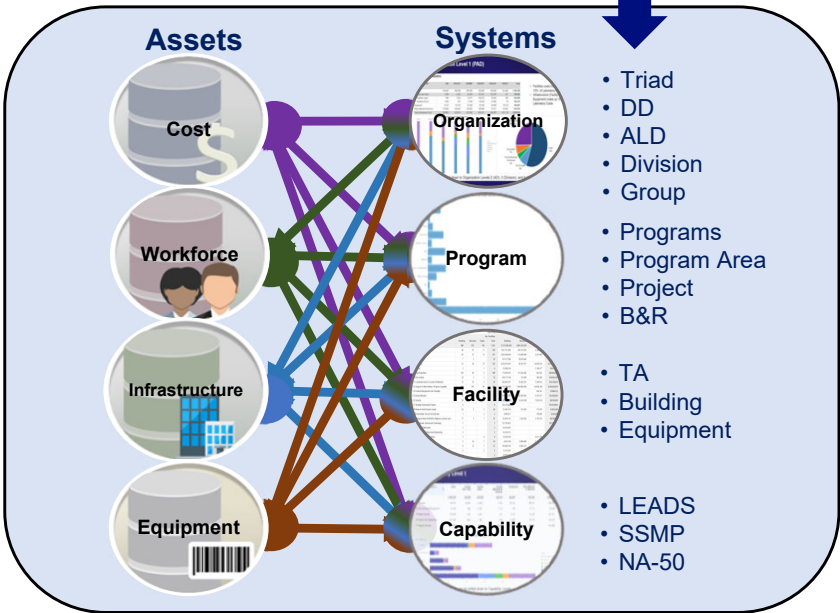
- ✓ Leadership planning
- ✓ System understanding
- ✓ Scenario studies



- Assumptions
- Data linkages
- Data mapping



- Collect, analyze, report, and warehouse quantitative/qualitative data about LANL to inform enterprise decision making and planning.
- Using data integration and a holistic view of LANL, we analyze the interconnectivity of cost, workforce, infrastructure, and equipment.



LEADS integrates laboratory business/operation data and provides framework for analysis and scenario studies at different resolutions

Process Modeling Supporting Los Alamos Production

- Detailed process modeling and analysis
 - Focused on supporting execution of LANL Production missions
 - Various modeling methods

ALDWP-STPO: Maureen Psaila-Dombrowski